

WHAT IS CLAIMED IS:

1. An optical disk which comprises a track groove and on which positional information indicating a physical location on the track groove is represented by a wobble shape of the track groove,

wherein the optical disk includes a plurality of positional information units that are arranged on the track groove, and

wherein each said positional information unit includes:

a positional information section that represents the positional information by a combination of wobble patterns selected from multiple types of wobble patterns that have been defined so as to correspond to respective signal waveforms that rise and fall mutually differently;

a sync mark section having a wobble pattern in a shape distinguishable from the wobble patterns of the positional information section; and

a precision positioning mark section ahead of each said positional information section, wherein the positional information is read out from the optical disk by:

detecting the sync mark section that has been formed on the optical disk;

detecting the precision positioning mark section;

establishing a bit synchronization for the positional information using the sync mark section detected and/or the precision positioning mark section detected; and

reading out the positional information in accordance with the bit synchronization established in the step of establishing the bit synchronization for the positional information.

2. An optical disk which comprises a track groove and on which positional information indicating a physical location on the track groove is represented by a wobble shape of the track groove,

wherein the optical disk includes a plurality of positional information units that are arranged on the track groove, and

wherein each said positional information unit includes:

a positional information section that represents the positional information by a combination of wobble patterns selected from multiple types of wobble patterns that have been defined so as to correspond to respective signal waveforms that rise and fall mutually differently;

a sync mark section having a wobble pattern in a shape distinguishable from the wobble patterns of the positional information section, and

a precision positioning mark section ahead of each said positional information section, wherein data is written on the optical disk by:

detecting the sync mark section that has been formed on the optical disk;

detecting the precision positioning mark section based on the sync mark section detected;

performing positioning using the precision positioning mark section detected; and starting to write the data based on a positioning result obtained in the positioning step.

3. An optical disk which comprises a track groove and on which positional information indicating a physical location on the track groove is represented by a wobble shape of the track groove,

wherein the optical disk includes a plurality of positional information units that are arranged on the track groove, and

wherein each said positional information unit includes:

a positional information section that represents the positional information by a combination of wobble patterns selected from multiple types of wobble patterns that have been defined so as to correspond to respective signal waveforms that rise and fall mutually differently;

a sync mark section having a wobble pattern in a shape distinguishable from the wobble patterns of the positional information section, and

a precision positioning mark section ahead of each said positional information section, said precision positioning mark section including an identification mark for use in precision positioning, wherein an optical disk drive for reading out positional information from the optical disk comprises:

means for detecting the sync mark section that has been formed on the optical disk;

means for generating a first detection window with a predetermined time width after a predetermined time has passed since a timing at which the sync mark section was detected by the sync mark section detecting means;

means for detecting the identification mark, which has been formed on the optical disk, by using the first detection window;

means for establishing a bit synchronization for the positional information, which is recorded on the optical disk, by reference to the timing at which the sync mark section has been detected and/or a timing at which the identification mark has been detected; and means for reading out the positional information at a timing at which the bit synchronization has been established by the means for establishing the bit synchronization for the positional information.

4. An optical disk which comprises a track groove and on which positional information indicating a physical location on the track groove is represented by a wobble shape of the track groove,

wherein the optical disk includes a plurality of positional information units that are arranged on the track groove, and

wherein each said positional information unit includes:

a positional information section that represents the positional information by a combination of wobble patterns selected from multiple types of wobble patterns that have been defined so as to correspond to respective signal waveforms that rise and fall mutually differently;

a sync mark section having a wobble pattern in a shape distinguishable from the wobble patterns of the positional information section, and

a precision positioning mark section ahead of each said positional information section, said precision positioning mark section including an identification mark for use in precision positioning, wherein an optical disk drive for writing data on the optical disk comprises:

means for detecting the sync mark section that has been formed on the optical disk;

means for generating a first detection window with a predetermined time width after a predetermined time has passed since a timing at which the sync mark section was detected by the sync mark section detecting means;

means for detecting the identification mark, which has been formed on the optical disk by using the first detection window; and

data writing means for setting a data writing start point or end point by reference to a timing at which the identification mark has been detected.